

Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-18 (cancelled)

Claim 19 (currently amended): [An apparatus as in claim 16], An apparatus for treating a patient comprising:

a radially expandable body having a proximal end, a distal end, a longitudinal axis therebetween, and a plurality of microstructures, each microstructure having first and second supports and a free end, the supports affixed to associate first and second adjacent portions of the radially expandable body, wherein the microstructures extend radially a distance of between 25µm and 5000 µm from the radially expandable body,

expansion of the expandable body within the patient effecting relative movement between the associated first and second portions of the expandable body,

the relative movement deploying the microstructures from an undeployed position along the expandable body to a deployed position with the free end projecting radially outwardly from the expandable body.

Claims 20-21 (cancelled)

Claim 22 (currently amended): An apparatus as in claim [16] 19, wherein the relative movement of the associated first and second portions of the expandable body comprises circumferential movement of the first portion relative to the second portion when the expandable body expands radially.

Claim 23 (original): An apparatus as in claim 22, wherein the associated first and second portions are in circumferential alignment and the circumferential movement of the first portion relative to the second portion draws the free end toward the circumferential alignment.

Claim 24 (original): An apparatus as in claim 22, wherein the circumferential movement pulls the affixed ends of the first and second supports apart which moves the free end.

Claim 25 (original): An apparatus as in claim 24, the radially expandable body further comprising an interior lumen along the longitudinal axis configured for receiving an expandable member which expands the expandable body, wherein the movement of the free end creates friction against the expandable member as the expandable member expands the expandable body, the friction projecting the free end radially outwardly.

Claim 26 (original): An apparatus as in claim 24, the radially expandable body further comprising an interior lumen along the longitudinal axis configured for receiving an expandable member which expands the expandable body, wherein expansion of the expandable body by the expandable member pulls the affixed ends of the first and second supports apart which torsionally deforms the first and second supports projecting the free end radially outwardly.

Claim 27 (original): An apparatus as in claim 24, wherein the radially expandable body is self-expanding composed and the self-expansion of the expandable body pulls the affixed ends of the first and second supports apart which torsionally deforms the first and second supports projecting the free end radially outwardly.

Claims 28-30 (cancelled)

Claim 31 (currently amended): An apparatus as in claim [16] 19, wherein each microstructure further comprises a third support affixed to an associated third portion of the radially expandable body, the associated first and third portions being connected so as to move in unison.

Claim 32 (original): An apparatus as in claim 31, wherein the first, second and third supports comprise elongate shafts attached to the free end and to the associated first, second and third adjacent portions of the radially expandable body, respectively, and wherein the second support is disposed longitudinally between the first and third supports.

Claim 33 (original): An apparatus as in claim 32, wherein the relative movement of the associated first and second portions of the expandable body comprises moving the associated first and second portions apart while the associated third portion moves in unison

with the associated first portion, so that the supports pull the free end in opposite directions forming a tripod structure which projects the free end radially outwardly.

Claims 34-40 (cancelled)

Claim 41 (currently amended): [An apparatus as in claim 40,] A system for treating a patient comprising:

An expandable body having a proximal end, a distal end, and at least one deployable microstructure, wherein expansion of the body deploys the at least one microstructure to project radially outward from the expandable body; and

a material carried by the at least one microstructure, wherein the material is delivered to the patient by the at least one microstructure, wherein the at least one microstructure includes a lumen and the material is held in the lumen; and

wherein the expandable body further includes a delivery microsystem and the material is delivered to the lumen from the delivery microsystem; and

wherein the delivery microsystem includes a therapeutic delivery control device which delivers the material to the lumen at predetermined intervals; and

wherein delivery is triggered by an external signal in the form of a radiofrequency signal, an injectable chemical signal, an ultrasonic signal or a combination of these.

Claims 42-55 (cancelled)

Claim 56 (currently amended): [A method as in claim 54, further comprising] A method of treating a patient comprising the steps of:

providing an expandable body having a proximal end, a distal end, a longitudinal axis therebetween and at least one microstructure having an end attached to the body and a free end;

positioning the expandable body within a vessel of the patient, wherein the at least one microstructure is in an undeployed position; and

expanding the body within the vessel so that forces are created which deploy the at least one microstructure, the free ends of the deployed microstructures projecting radially outward from the expandable body, wherein the at least one microstructure carries a material; and

further comprising delivering the material to the patient; and;
further comprising expanding the body so that the deployed at least one microstructure penetrates the vessel wall, wherein the material is held in a lumen within the at least one microstructure[.]; and
delivering the material comprises injecting the material into the penetrated vessel wall.

Claims 57-59 (cancelled)

Claim 60 (currently amended): A method [as in claim 58,] for treating a patient comprising the steps of:
providing an expandable body having a proximal end, a distal end, and at least one deployable microstructure carrying a material;
positioning the expandable body in an undeployed position within a vessel of the patient;
expanding the body to a deployed position within the vessel, wherein expansion of the structure deploys the at least one microstructure to project radially outward from the expandable body;
penetrating a wall of the vessel with the at least one microstructure; and
delivering the material from the at least one microstructure to the wall of the vessel.
wherein the material is held in a lumen within the at least one microstructure, and delivering the material comprises injecting the material into the penetrated vessel wall.

Claims 61-63 (cancelled)

Claim 64 (allowed): An apparatus for treating a patient comprising:
an expandable body having an inner ring and an outer ring surrounding a longitudinal axis; and
at least one microstructure, each microstructure having first and second supports and a free end, the first support affixed to the inner ring and a second support affixed to the outer ring,

expansion of the expandable body within the patient effecting relative movement between the inner ring and the outer ring,

the relative movement deploying the at least one microstructure from an undeployed position to a deployed position with the free end projecting radially outwardly from the expandable body.

Claim 65 (allowed): An apparatus as in claim 64, wherein the first and second supports are rotateably connected near the free end.

Claim 66 (allowed): An apparatus as in claim 64, wherein the microstructures extend radially a distance between 25 μm and 5000 μm from the radially expandable body.

Claim 67 (allowed): An apparatus as in claim 64, wherein the free end has a pointed shape.

Claim 68 (allowed): An apparatus as in claim 67, wherein the pointed shape includes a single point, a multiple point, an arrow shaped point including a pointed tip and at least one undercut, or a combination of these.

Claim 69 (allowed): An apparatus as in claim 64, further comprising a material carried by the at least one microstructure, wherein the material is delivered to the patient by the at least one microstructure.

Claim 70 (allowed): An apparatus as in claim 69, wherein the material comprises at least a gene, at least a drug or a combination of these.

Claims 71-78 (cancelled)

Claim 79 (allowed): A method of treating a patient comprising the steps of:
providing an expandable body having a proximal end, a distal end, a longitudinal axis therebetween, an inner lumen and at least one microstructure having an end attached to the body, a free end and a protruding region therebetween which protrudes into the inner lumen;
positioning the expandable body within a vessel of the patient, wherein the at least one microstructure is in the undeployed position; and

applying a force against the protruding region from within the inner lumen which deploys the at least one microstructure to a deployed position wherein the free ends of the deployed microstructures project radially outwardly from the longitudinal axis.

Claim 80 (allowed): A method as in claim 79, wherein applying a force against the protruding region comprises expanding an expandable member against the protruding region.

Claim 81 (allowed): A method as in claim 80, wherein the expandable member comprises an inflatable member.

Claim 82 (allowed): A method as in claim 79, wherein applying a force against the protruding region rotates the free end around the attached end.

Claim 83 (allowed): A method as in claim 79, further comprising expanding the body so that the deployed at least one microstructure penetrates the vessel wall.

Claim 84 (allowed): A method as in claim 83, wherein expanding the body comprises inflating an inflatable member within the body so as to increase its cross-sectional diameter.

Claim 85 (allowed): A method as in claim 79, wherein the at least one microstructure carries a material and further comprising delivering the material to the patient.

Claim 86 (allowed): A method as in claim 85, wherein the material comprises at least a gene, at least a drug or a combination of these.